1. Tabular Q-Learning and SARSA

i.

$$Q(A, Down) = -1$$

$$Q(B, Up) = 1.5$$

ii.

$$Q(A, Down) = -1$$

$$Q(B, Up) = 1.5$$

2. Approximate Q-Learning

i. Down is the action prescribed, as its projected Q value according to the function is 3, while up would be 2

ii.
$$w_1 = .8333$$

iii.
$$w_2 = .8333$$